Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

Extension Service Circular 90 October, 1928

FOREIGN AGRICULTURAL EXTENSION ACTIVITIES

Canada, Scotland, and India

J. M. Stedman

UNITED STATES DEPARTMENT OF AGRICULTURE
Extension Service..............C. W. WARBURTON *Director*
Office of Cooperative Extension Work.....C. B. SMITH *Chief*
Washington, D. C.

LIBRARY OF THE
OFFICE OF EXPERIMENT STATIONS
NOV 28 1928
EXPERIMENT STATION FILE

Cooperative Extension Work in Agriculture and Home Economics

Extension Service Circular 90 October, 1928

FOREIGN AGRICULTURAL EXTENSION ACTIVITIES

Canada, Scotland, and India

Abstracts from Recent Reports and Publications Received by
J. M. Stedman, Associate Agriculturist, Extension Studies,
Office of Cooperative Extension Work.

Contents

Page

Canada

Nova Scotia

Progress of extension work 2
First demonstration train 2
Boys' and girls' club work 3

Quebec

Boys' and girls' calf-feeding competitions 3
Farm boys' week..4

Saskatchewan

Farm boys' camps 5
Boys' and girls clubs 7
Agricultural lecture car 7

Scotland

Inquiry as to extent agricultural education is reaching actual farmers....................7

India

Conclusions and recommendations of the Royal Commission on Agriculture 14
Cooperative demonstration train in Bengal 17

DISTRIBUTION. - A copy of this circular has been sent to extension directors, State and assistant State county agent leaders, State and assistant State home demonstration leaders, State and assistant State club leaders, negro supervisors, and to agricultural college and experiment station libraries

Canada

Nova Scotia

Progress of extension work. - Since the reorganization of extension work in May, 1926, by the Department of Natural Resources, an expansion of activities has resulted. During the year ending September 30, 1927, 14 agricultural representatives or county agents were employed in as many districts, 12 of them working throughout the year. This is about four times as many as were employed previous to the reorganization. They held 643 meetings; made 10,882 visits to farmers to discuss their problems; traveled 99,100 miles by motor car; held meetings with boys' and girls' clubs; coached club members in judging cattle, sheep, and swine; organized school and community fairs; formed livestock shipping associations; assisted in organizing egg circles; and gave demonstrations in poultry culling, killing, dressing, and packing.

Arrangement and organization of tour

Object of tour. Contents of coaches

First demonstration train. - In 1926, the first demonstration train traveled over the province, starting from Truro on June 26. The tour was arranged by the department in cooperation with the Canadian Railway, the Dominion Atlantic, and other systems, and was finished on July 14. Points were visited in the western part of the province from Truro to Yarmouth, and stops were also made at South Shore and Midland points. The superintendent of agricultural societies was instructed in regard to preparation and arrangement of the tour, including routing and advertising, and when everything was in readiness for the train to start, he presided over a meeting held to explain the object of the tour. The Minister of Natural Resources, who was the first speaker, stated the department was featuring the cow, the pig, and the hen, for the purpose of setting forth ideas which if put into practice by those visiting the train would render Nova Scotia self-supporting and obviate the spending of thousands of dollars in importing supplies each year. There were six cars on the train. The first carried supplies. In the second car were dairy cows - two grade Holsteins, a grade Ayrshire, a Guernsey and a Jersey grade - and wall placards gave advice in regard to home-grown feeds. The third car carried hogs - Yorkshire pigs, a Yorkshire sow, a select hog, an unfinished hog, and a heavy hog. The fourth car, the poultry and dairy products car, had an exhibit showing modern methods of poultry production; an incubator and stove brooder in operation; a hen with a brood of chickens hatched in the natural way, a convenient coop and run, models of hen houses, samples of desirable feeds; and a display of dairy utensils and equipment which took up half the car. Demonstrations were given in testing milk and cream for butterfat. Exhibits by the department of health and the women's institutes occupied the fifth car. A unique exhibit of the latter, especially designed for children, consisted of a model showing a main road with two branches, one leading to the fairy house of health where right food promoted health and happiness, while the other branch led to the witches' house of woe

where wrong food brought ill health and unhappiness. There were placards advocating the use of more milk and drawings showing " a safe well" and "a dangerous well." The sixth car was a combination buffet and sleeping car. A second tour was made by the agricualtural demonstration train from May 31 to July 8, 1927, and was visited by more than 50,000 persons. It had eight cars and was a veritable college on wheels. Farm machinery was displayed and a new feature was an exhibit of a Chinchilla doe and litter of six rabbits.

Boys' and girls' club work. - Boys' and girls' club work is now carried on in 12 of the 18 counties of Nova Scotia. In 1927, there were pig, calf-feeding, and poultry clubs. The two latter were organized for the first time-- 8 calf-feeding clubs in 7 counties and 7 poultry clubs in 4 counties. Pig clubs which began in 1922 with one club and 30 members numbered 25 clubs with 426 members in 1927. The objects of pig clubs, according to the policy adopted by the Federal department in 1921 are:

(1) To stimulate greater interest in hog raising among boys and girls and to develop a more general knowledge of marketing methods.

(2) To give boys and girls practical instruction in swine judging, so that they might have sufficient knowledge of market types to select breeding stock intelligently.

(3) To develop the community principle of breeding hogs.

(4) To create a keener study of production costs, thus bringing about improved methods in feeding and management.

(5) To demonstrate the value of producing a superior type of bacon hog and marketing it to the best advantage.

Results of pig-club work

Boys' and girls' pig clubs have aided in developing the swine industry of Nova Scotia. Before they were organized all hogs were marketed dressed. The first shipment of live hogs was made in 1922, the year the first club was formed, and now they are marketed every month, most of them bacon hogs, the type recognized throughout Canada. Farmers are raising more hogs as a result of club work, as they are sure of a satisfactory market.

Quebec

Object

Boys and girls calf-feeding competitions. - The Federal and provincial departments of agriculture have been encouraging calf-feeding competitions among the young people of Quebec for the past five years. The object of the competitions is to interest boys and girls in the improvement of young breeding stock and to encourage the love of farm life in general; impress upon them the economical and practical feeding of young calves to obtain the maximum production from the animals when mature; encourage the study of cost of production; develop the principle of community breeding; demonstrate the

importance of appraising young breeding stock; and encourage the use of good sires. The results of this work have been good, and the number of competitions has steadily increased. From a beginning of 10 competitions and 250 members in 1923, there were 52 competitions with 1,510 members in 1927. In 1927, with the idea of obtaining still better results, it was decided to continue competitions with the same animals for three years at least; that is, to include yearlings and two-year olds. Those who competed in 1926 and 1927, therefore, had the privilege of taking part in the 1928 competitions. Each competition must have at least 15 members, boys and girls from 10 to 18 years, all from the same parish, if possible.

Regulations

The Federal and provincial departments each pay 50 per cent of the awards in each of the three classes. Each competitor is required to pay an entry fee of $1. The first year competition is open to districts organizing calf feeding for the first time, and each competitor must raise two calves born after January 1. The competition must include at least 15 entries and in the case of male calves only purebred animals are eligible . The second year competition includes two classes - calves born during the year and yearling animals exhibited the previous year. In the third year competitions there are three classes - 15 entries of calves born during the year, 8 entries of yearling animals exhibited the second year, and 5 entries of two-year old animals exhibited the first and second years. Each competitor is required to send a detailed report of cost of feeding to the agronomist the first of each month. The agronomist and the promoter of the Federal department make monthly visits, where possible, to the competitors.

Farm boys' week. - A farm boys' week was held at MacDonald College from July 2 to 9, 1928. This was something of an innovation and its object was to give farmers' sons a holiday as well as an opportunity to see what goes on at an agricultural college. The original plan was to have 100 boys, but so many applied that the limit was raised to 150, and finally 250, and even then 50 applicants were refused. Twenty-one counties of Quebec were represented, boys coming from Pontiac in the extreme west to Bonaventure in the extreme east. Practically every English-speaking section of the province was represented. The first day, July 2, was registration day. The next day the college buildings were visited in the morning, and in the afternoon the boys engaged in sports, while movies, singing, and other social features occupied the evening. Wednesday and Thursday mornings were taken up with visits to some of the departments of the college. Two farms of note were visited Wednesday afternoon, and Thursday afternoon was devoted to sports with a banquet in the evening. Trips to points of interest on Friday morning and a field day in the afternoon completed the program. The only expense the boys had in connection with the trip was transportation to and from the college, as they were the guests of the institution. The first farm boys' week in Quebec was considered a real success, bringing the college staff, as it did, into close contact with a representative group of young people from the farm and giving the boys a chance to get acquainted with other boys and men with the same interests.

Saskatchewan

Object

Farm boys' camps. - Farm boys' camps, begun about 14 years ago by the weed and seed commissioner of the province, are now one of the important activities of the junior extension work of the university and are conducted in cooperation with the agricultural societies or any recognized rural organization. The movement has grown tremendously, and changes have been made in regulations first adopted regarding eligibility to attend the camps. The idea of the founder was to bring together 200 or 300 boys every year when one of the large agricultural exhibitions was being held to show them the best the province could produce as an incentive to do as well or better when they became farm managers. The first camp was held at Regina, in cooperation with the Regina Exhibition Board, and was attended by 200 boys from 16 municipalities. There were 20 teams, each consisting of 10 boys, 14 years of age, who were brought in by the agricultural secretaries or the county agents. An entrance fee of $1.25 was required of each boy to cover partly the cost of conducting the camp. Four years later, in 1919, so many boys applied for admittance to Regina that a new system had to be adopted, and two camps were held that year. The second one was organized at Saskatoon, after a conference of the Regina and Saskatoon Exhibition Boards with the extension department of the University. The program at each camp was different and a boy attending both camps received all-round training in stock judging, grain judging, and weed and crop identification. Later demonstrations and competitions in culling and judging hens were added to the program.

Saskatoon camp

Small camps in addition to two large ones

By 1922, the movement had grown to such an extent that the extension department suggested that camps be organized in neighborhoods where exhibitions of Class" B" were held. At present three small camps are held besides the two large ones. Teams of five boys each, 14 to 17 years old, who live on the farm at least 10 months of the year and obtain their living from the farm, are eligible to attend a large camp and must be accompained by an adult supervisor. Not more than 50 teams are admitted each year to Regina or Saskatoon. Teams of three boys, 13 to 16 years old, with or without a supervisor, are admitted to the small camps, 30 teams being the maximum number allowed at each camp. Boys are encouraged to go to one of the small camps first and afterwards to try the Regina camp and then the Saskatoon. A boy is allowed to attend only one camp a year and is admitted to the same camp but once.

Management

The camps are under the management of the extension department of the university. The boys are divided into two or four companies with a captain in command of each who is generally a supervisor who has attended several camps and is acquainted with the regulations and methods of management. They have quarters in one of the large school buildings in the city where the camp is held and everything is provided except blankets, pillows, towels, and soap. The exhibition board whose guests the boys are, arranges to have the meals cooked and served in the school or provided by a nearby caterer, much emphasis being laid on having an abundance of good food at all the camps.

Educational as well as recreational institutions

The camps are educational as well as recreational institutions, and not merely places to conduct stock-judging competitions. The boys visit points of interest in the city where the camp is held and have free tickets to the grand stands at the exhibitions. The day's program begins at 6:15 in the morning and lasts until 10.30 at night. A half day of the time spent at the camp is allowed the boys to do what they like. There are games and physical exercise with a physical director in charge. The training at the small camps is preparatory to that of the large camps and includes competitions in judging heavy horses, beef cattle, dairy cows, bacon hogs, and in identifying weeds and weed seeds. At Regina the same classes of animals are judged, but the judging is more difficult. At Saskatoon the program includes competitions in mutton judging, judging hens for egg production, judging grain, and identifying farm crops, weeds, and weed seeds. Lectures and demonstrations are given at each camp on the subjects of the competitions, besides talks on agriculture, home beautification, health, and citizenship. In the judging competitions, the boys are required to place a class of four animals and write out their reasons for placing. The winners receive prizes, the highest award being the Mantle Memorial Scholarship, worth about $100, and used at the College of Agriculture, Saskatoon. To receive this scholarship the boy standing highest in the competitions must apply for and promise to use it. The exhibition association also offers a $50 scholarship to the boy standing the highest in each competition. Cups and shields are awarded to teams winning first place, and at the small camps prizes are given in the shape of gold watches to boys standing highest in the whole number of competitions and books and medals to members of teams that stand high. In 1926, 16 boys won prizes - 6 at Regina, 7 at Saskatoon, and 1 each at Battleford, Yorkton, and Prince Albert.

Training at small camps preparatory to large camps

Preparatory courses

Preparatory one-day judging courses are held by the extension department of the university for each society or community that decides to send a team to a large camp. In many places this is a big event, and the boys' parents come to the courses. Cars take the boys to the different farms where the judging takes place. At one farm horses are judged, at another cattle, and weeds are identified on the roadside and around the farmyards. In some localities the supervisor meets the team and gives the boys special training every Saturday for five or six weeks before they go to camp. In 1926, 64 preparatory courses were held with an attendance of 1,511.

Results of camp training

Since this movement began in 1915, more than 5,000 farm boys have attended one or more camps. The camps are exercising a very beneficial influence over the young farmers. A boy who has attended a small camp and passed on to one of the large ones, has learned something about sound agricultural principles, knows the requirements of a good animal, the importance of good

clean seed, and the place of poultry and dairying on the farm. The boys are encouraged to join pig or junior breeding clubs, to grow registered seed, and to join their local agricultural societies.

Boys' and girls' clubs. - Twenty-eight boys' and girls' bacon pig clubs were conducted in the province in 1927 with a membership of 463. A total of 2,160 hogs were fed, finished, and marketed. Boys and girls from 11 to 21 are eligible for membership, and each club must have at least 10 members. The pigs are exhibited at the local fairs where prizes are awarded, one-third paid by the local agricultural society, one-third by the Dominion livestock branch, and one-third by the provincial department of agriculture. A judging competition is held between teams of two members each to determine the teams to take part in the interclub competition. In 1926, 21 teams represented their clubs at the interclub competition held at the University of Saskatchewan. The members traveled as guests of the railway companies, and the expenses of the trip were defrayed by a grant to each club from the Saskatchewan Swine Breeders' Association. The two teams scoring highest in the interclub competition were awarded a trip to Toronto to the Royal Fair, the members, of one team as the guests of the Canadian Pacific Railway, and the other, the guests of the Canadian National Railway.

Agricultural lecture car. - As a new venture the extension department of the university operated an agricultural lecture car in 1926-27 in the northern part of the province in connection with the short courses held every winter for the farmers. The car, operated in cooperation with the Canadian National Railways, was fitted up to hold as large audiences as possible. The object was to reach new Canadian settlers and to visit places without a local organization or a suitable hall for a meeting place. Two lecturers, a livestock specialist and a field crops expert, were on the car, and for a short time the superintendents of the Dominion experimental farms at Scott and Rosthern each gave their services while the car was in their districts. Forty-one places were visited, and more than 3,000 adults attended the lectures. In most places special lectures were given for the school children.

Scotland

Inquiry as to extent agricultural education is reaching actual farmers. - At the request of the Secretary of the Board of Agriculture for Scotland, an investigation was conducted during 1927 to determine "how far agricultural education is reaching those actually engaged in farming in Scotland and is directly productive of improvement of farm practice." The person chosen for this task held the position of assistant lecturer in agriculture in the West of Scotland College, Glasgow, 35 years ago and was frequently engaged in lecture work among the farmers in the college area. Knowing the beginnings of the work as few did, no one was considered better qualified to make a comparison of past and present conditions. A review of the results of this investigation and the conclusions reached, which were embodied in a detailed report published early in 1928, are given herewith. In conducting the inquiry, tours were made through rural districts and interviews were held with farmers, county organizers (county

Method of conducting inquiry

agricultural extension leaders), instructors, and others especially interested in or acquainted with agricultural development. Information was also obtained from officers of the board of agriculture, the staffs and secretaries of the three agricultural colleges situated at Edinburgh, Glasgow, and Aberdeen, representatives of the agricultural press, and members and officials of milk-recording societies, and other farmers' organizations.

Change in attitude of enlightened farmers since extension schemes became general

The report first refers to the attitude of farmers 35 years ago regarding agricultural education and research and reviews the benefits that have resulted from the activities of the extension officers of the agricultural colleges, the county organizers and their staffs of instructors, since the period 1901 to 1905, when extension schemes became general. The organizers, the chiefs of the county extension staffs, besides arranging the work of their assistants and attending to office duties, give lectures to farmers and render them direct assistance on their farms. They may also be consulted by farmers in their offices and at the markets; give assistance in clean milk competitions, soil analyses, and the like; assist and advise education authorities in regard to rural science classes in some counties, and in others give advice and instruction to cheese makers. In the area of the agricultural college at Aberdeen, there is a director of county work, who devotes his whole time to the extension activities of the district and gives helpful direction to the organizers. Although there is no officer of this kind in the Endinburgh and Glasgow areas, the organizers are in closer touch with the principals and teachers at the college, some having their headquarters at the college, and in a few cases give lectures to college classes. For 25 years or more the organizers have been endeavoring to educate the farmers and are responsible for a large amount of the pioneer extension work, principally carried on through lectures and experiments. As a result of all this work a marked change was noted in the attitude of enlightened farmers to the value of such means of obtaining agricultural education. Thirty-five years ago many farmers were skeptical of the value of agricultural education and research and did not hesitate to say so. At present progressive farmers not only have no criticism to make, but acknowledge they have a better knowledge of fertilizers, raise better dairy cattle and poultry, and produce milk more economically as a result of education.

Material benefits

The more material benefits from the work of the extension staffs may be noted in the realm of fertilizing and crop production, as their lectures and experiments have been chiefly confined to these two lines, very little attention having been given to raising and feeding livestock, probably on account of the greater difficulty and expense in conducting experiments. An examination of cropping statistics from 1886 to 1925 was made to determine the influence of the instruction and advice given by the extension officials. Due consideration was given, however, to the fact that this influence is not always shown by increased returns, but sometimes by

reduced cost of production. The difficulty of determining how much improved crop production was due to instruction received in schools and classes and to research, and how much to such agencies as the agricultural press, the national and local agricultural societies and organizations, was also taken into account. The statistics for the periods 1896 to 1900 and 1921 to 1925 were taken as affording the best comparison of crop yields. In comparing yields of wheat, barley, oats, potatoes, turnips and swedes, and mangolds for these two periods, a slight increase was observed in those of barley and wheat, and none in that of mangolds, while in the case of oats, potatoes, turnips and swedes, there were yields of 14.4 cwt., 6.7 tons, and 16.8 tons per acre respectively in 1921 to 1925 against 13.2 cwt., 5.4 tons and 15.0 tons in 1896 to 1900, or an increase of 58,000 tons of oats, 189,000 tons of potatoes, and 729,000 tons of root crops. These crops occupy an important part of the cultivated area in Scotland and the money value of the increases is a large sum. Definite results were observed from the use of improved grass seed mixtures, and as a consequence the stock-carrying capacity of the land has increased. The following figures furnish an example of this:

	Laurencekirk District Kincardine County		Capar District Fife County	
	1912 to 1914	1925	1912 to1914	1925
	Number pastured	Number pastured	Number pastured	Number pastured
Sheep....................	14,000	24,000	35,000	51,400
Cattle..................	6,400	6,600	12,950	12,850
Total animals......	20,400	30,600	47,950	64,250

Though the acreage in pasture in the two districts was practically the same in both periods - 57,200 acres in both cases in Laurencekirk District, and 96,500 acres in 1912 to 1914 and 96,400 in 1925 in Capar District, there was a large increase in number of sheep pastured The inquiry showed that more fertilizer of a better quality was used than when extension work began to be general, and methods of applying fertilizers were better understood as a result of attending lectures. Sound knowledge of fertilizers was not universal, as the farmer often relied on the advice of the dealer rather than on that of the college, who, however, in many cases had attended the college lectures or studied results of experiments.

Influence of Kilmarnock
Dairy School

The influence of the extension activities of Kilmarnock Dairy School conducted under the supervision of the West of Scotland College was reflected in the improvement of the cheese-making industry of the region. This is due to the work of the local cheese-making instructors and the high standard set by the school. From the inspection of cheese dairies visited in the course of the investigation it was evident that great reliance was placed on the advice of the instructors.

Work of Scottish Milk Records Association

The Scottish Milk Records Association has been responsible for a great improvement in the dairy industry. The officers of the agricultural colleges are connected with this work and the county organizers give lectures and advice in milk recording. The object of the association is to induce all to use these records as a guide in selecting and breeding as well as in feeding their animals. Advice is given the farmers through personal visits and the distribution of literature. The work was begun in 1903. In the first three years. less than 103 herds were tested with an average of less than 1,000 cows a year. In 1914, 641 herds and 26,424 cows were tested. There was a decline in numbers during the period of the World War, but in 1926 the number of herds tested was 730 and the number of cows 29,232, or about 20 per cent of the cows in milk in counties where dairying was extensively practiced. These figures show that a large number of farmers have still to be educated to the advantages of milk recording. Most of the members of the societies use the records only to improve the value of their herds, and very few recognize as yet their importance as a means of regulating feeding according to milk yield.

Improvement in poultry keeping

A great improvement has taken place in the poultry-keeping industry, partly due to egg-laying tests, distribution of eggs from the best laying breeds, lectures and advice of college teachers, and the importance given the subject in the press. Results may be seen in better breeds, better housing and feeding. The interest in poultry keeping is shown by the large number of persons attending lectures. In 1908, the poultry raised in Scotland was 4,107,000 chickens, 294,000 ducks, 26,000 geese, and 69,000 turkeys against 5,015,000 chickens, 292,600 ducks, 28,600 geese, and 90,500 turkeys in 1926. The average number of eggs laid by a hen in a year increased from 84 in 1913 to 100 in 1925.

In other lines of activity, as horticulture and beekeeping, good work is being done by the extension agents of the colleges. In view of the fact that the expenditure for agricultural education by the three colleges, including work within as well as outside the institutions, does not exceed 1 pound (about $5) a year for each farm, the results seem satisfactory.

Courses at the college

Short courses at the college, demonstrations on college farms, local demonstrations, and evening classes have been used by the colleges to reach the farmers. The inquiry showed that special courses for farmers are very poorly attended at present, not more than two persons from a county being the average. Formerly short courses were held for young men who could be spared from farm work and lasted from four to six weeks during the winter. Two such courses were usually held each winter and inquiries showed that

many of the young men who had attended these courses had become progressive farmers. The revival of such courses is advocated as there is more material available for study than formerly, and education could be greatly extended among farmers by this means. Agricultural organizers should teach these courses as they are well acquainted with local conditions, know what young men need to be taught and how the instruction should be presented. Courses of only one week in length would be advantageous in extending the influence of the colleges.

Demonstrations

The annual demonstrations at the college farms are excellent as a means of reaching the farmers as far as they go, but the area served by each center is too large. There should also be demonstration areas at a distance from the college. Local demonstration plots are maintained in some localities, but farmers do not visit them as a rule. The conclusion was reached that for the success of a demonstration something striking must be shown. There must be room for visitors to see it; the demonstration should be maintained for a number of years; and a teacher or specialist from the college should meet the farmers at the plot from time to time to explain the object of the demonstration.

Evening classes

The evening classes conducted by the organizers have an average attendance of 20 farmers at each class, and some elderly men are included. It seemed difficult to get the attention of young men as the older farmers wanted to take up the time discussing their personal experiences.

Mass of farmers not yet reached by agricultural education

The results of the inquiry led to the conclusion that the mass of persons actually engaged in farming has not yet been reached by agricultural education. The task of the extension staffs is a large one, as of the 75,000 farms in Scotland, 50,000 are not more than 50 acres in area. while 16,000 of the remainder do not exceed 150 acres in extent and are operated in every case by working farmers who need all the assistance and instruction the colleges can give. In addition, there are a large number of farm workers in places of responsibility who need instruction in their special branches. While in every county the organizer can point to individuals who follow his teachings more or less closely, in talking to farmers in the markets, on their farms, along the road, or elsewhere, it was apparent to the author of the report that the greater number know nothing of what has been accomplished by research and are not informed of the experiments in progress. They do not attend lectures and do not read college bulletins or agricultural journals, though many of them obtain information from the press and agricultural shows and are influenced by the example of their more progressive neighbors. The work of such organizations as farmers' unions cooperative societies, and milk-recording associations has had similar results. Up to a certain point there is a satisfactory increase in membership, but after that it is difficult to enroll new members and keep

up their interest and support. There is another class of farmers, more intelligent and progressive, who are keenly interested in the work of the colleges and the results of research, have attended local lectures and put into practice the teachings received, but are now in need of more specialized instruction and can not be expected to listen to lectures on worn-out subjects.

Too much time spent in working with mature farmers

It appears that one of the main reasons progress has been slow in reaching the mass of farmers through agricultural education is that too much time has been spent in trying to persuade persons with fixed habits and ideas to adopt modern practices in connection with balanced rations for dairy cows, fertilizers, feeding, and the like. Farmers of mature age have been expected to grasp scientific facts presented in lectures which even alert young students can not understand and apply without the aid of a textbook. The organizers on their visits to farmers talk about the application of chemisty and biology to the various branches of farming, such as fertilizing, seeding, crop growing, and feeding, rather than the general management of livestock, veterinary hygiene, general farm management, production costs and such subjects. The reason for this is that more emphasis has been laid on the scientific than on the practical side of the organizers' training.

Lack of organizing committees

Another reason why more progress has not been made in extension work, as shown by the inquiry, is the lack of organizations interested in the work of the colleges. As there is no committee or other body to attend to the arrangement of lectures, the county organizer finds it necessary to go around among the farmers and invite them to lectures or send out notices of meetings. On account of this lack of organizing committees a good deal of the instructors' time has to be spent in giving personal assistance to individual farmers, and great importance is placed on the attendance of the organizers at the markets and on visits to farms. The instructors must devote a certain amount of their time to such work, but in a good many cases the farmers could obtain the information they desire from the organizers' lectures or from bulletins. Individual instruction is valuable, but only a small number of the farmers in the territory of each organizer can be reached in this way.

Farmers must organize

A study of the whole subject of reaching actual farmers more rapidly by agricultural education led to the conclusion that to obtain the full benefit of agricultural education and research, farmers must be taught to work together; that is, they must be organized and seek instruction collectively from the colleges and research institutions. The spirit of cooperation is weak, but there is evidence that farmers are beginning to realize the importance of working together, as shown in the farmers' union movement, milk-recording societies and other organizations. Many farmers still think that cooperation means doing away with middlemen, and some influential persons do

not favor farmers' organizations. To foster the spirit of cooperation work should begin with young farmers. The winter agricultural classes conducted by the county organizers are a good field for this purpose. Young men between 20 and 30 afford the best working material, as at these ages they have usually chosen their careers, their sense of responsibility has matured, they are still open to conviction, are ambitious, and have had practical experience in farm work. Instead of the work ceasing at the close of a course and thus much time and trouble being wasted, a circle, club, or society should be formed to meet periodically and study subjects of interest to the members. The local organizer or one from another county, or even one of the members should conduct the meetings. The club or society should also meet for cultural or social purposes and should arrange excursions to research institutes, demonstration centers, experimental farms, and agricultural shows. After several circles or societies have been organized in a county, the next step would be to form a federation. The young men would be trained in this way to become members of agricultural associations or local councils, the need for which is very apparent when it is considered that less than one-fifth of the education authorities in some counties are farmers. Local assistants would also be provided to aid the organizer with details which he now has to attend to himself, as making arrangements for demonstration centers or for courses, collecting local information for colleges, and the like. Agricultural discussion societies which are springing up in various parts of Scotland and are doing good work in spreading agricultural information may be started by forming organizations of young farmers as the result of winter classes.

Winter classes as a means of reaching ing farmers

Federations of young farmers

Briefly summed up, the conclusions and recommendations based on the inquiry are:

Conclusions and recommendations

(1) There has been great improvement in farm practice among enlightened farmers as a result of the work of the extension staffs of the agricultural colleges. This is especially true in the case of crop production, fertilizing, dairying, and poultry keeping, to which most attention has been given.

(2) Agricultural education has not reached the mass of farmers, principally because too much time has been spent in trying to give scientific instruction to men of mature years whose habits are already fixed and who are not progressive. To realize results instruction of this kind should begin with young people. On the other hand, educated farmers who read and think will not attend courses on well-worn subjects but are interested in lectures and demonstrations by specialists giving the results of research work.

(3) The lack of organizations interested in the work of the colleges is another reason why more progress has not been made in reaching the farmers through extension work. As there are no organizing committees, a good deal of the organizers' time is spent in going around to invite farmers to lectures and giving them personal assistance on their farms.

(4) Local winter courses held by county organizers seem to be one of the best means of reaching the mass of farmers. For best results, the students should be farmers and farm workers from 20 to 30 years of age.

(5) Before the end of a winter course, the students should be encouraged to form a circle, or society to continue the work begun by the organizer. The latter should draw up a constitution for the society and outline the work to be undertaken, but the members should arrange the meetings which should take the form of a discussion by one of their number on an article from an agricultural journal or some subject of common interest, or a lecture by the local organizer or one from another county.

(6) When several clubs or societies of this kind have been formed in the county, the next step would be to form a federation. To make agricultural education and research really effective farmers must be taught to work together. In this way the young men would be trained to become members of agricultural associations or of local councils dealing with matters of interest to farmers. The organizers would also have local assistants to aid them with details which they now have to arrange themselves in connection with demonstration centers, courses, and the like.

(7) The work of the three agricultural colleges must be coordinated. They are all doing the same kind of work in their respective areas, but each college knows very little about what the others are doing. A director of extension work should be appointed for the Edinburgh and Glasgow areas.

India

Conclusions and recommendations of the Royal Commission. - The Royal Commission on Agriculture in India, the first body appointed for the specific purpose of examining and reporting upon the conditions of agriculture and rural economy in that country, spent most of the time from October 11, 1926 ,to the latter part of 1927 in this investigation, visiting all the large provinces and covering 18,917 miles. A detailed report on the existing conditions with recommendations for the improvement of agriculture and the promotion of the welfare and prosperity of the rural people was submitted to Parliament in June, 1928. The following is a brief summary of the conclusions and recommendations of the commission based on evidence from official and unofficial persons and their own observations during the period of the investigation, in regard to the most successful and effective methods of imparting scientific instruction to the farming people and inducing them to adopt improved practices:

Ocular demonstration

(1) In view of the widespread illiteracy and prejudice, ocular demonstration is by far the best and quickest means of inducing rural people to adopt new and improved practices.

Demonstration plots vs. demonstration farm

(2) Of the two forms of demonstrating improved practices in crop production - the demonstration farm and the demonstration plot - almost all were agreed that the latter was preferable. One objection to the demonstration farm, which is on government land and managed entirely by the agricultural department, is that the farmers generally have the idea the methods used can not be applied to their own farms. They think the results are largely due to the money spent on the buildings, cattle, and implements which are far better than they can afford. Another objection and an important one is that the influence of the farm does not extend outside of the immediate neighborhood in which it is located. The demonstration plot, on the other hand, has neither of these objections. There are two methods of conducting the demonstration plot which is always cultivated under the direction or control of the department of agriculture. Under one system, which is used in the Central and United Provinces, the plot is hired from the farmer by the government, the labor being done in the Central Provinces by the departmental staff, and in the United Provinces by intelligent village youths, who give a part of their time to the work under the direction of the demonstrator. In the United Provinces the area of the demonstration plot varies from one-half to 1 acre. It is hired for a year and everything needed in the work - bullocks, improved plows, and other implements - is provided the demonstrator to avoid interference with the farmer's regular routine. In the Central Provinces the demonstration plot is about the average size of plots cultivated by the farmers and the work covers a period of five years. By the other system of conducting demonstration plots which is followed in Bengal, Madras, Bombay, and Punjab, the work is done from beginning to end by the farmer on whose land the plot is located, under the direct supervision of the demonstrator. Implements that are being tested are loaned free of charge and improved seed or fertilizers are supplied. On an adjoining plot the methods in common use are practiced by way of comparison. Records are kept of all expenditures on both plots to enable the farmer to determine the financial gain from the use of the new methods. Both of these forms of demonstration plots have their advantages. Under the method used in the Central and United Provinces more accurate data are obtained, as the plots are farmed by or under the close supervision of the departmental staff, while the method used in the other provinces enables the farmer to better appreciate the value of the improvement, as he does all the work himself. It was considered advisable that each province should adopt both methods of managing demonstration plots and compare results. The agricultural departments in Bombay, Burma, and Madras have decided to adopt the demonstration plot exclusively as preferable to the demonstration farm in inducing farmers to introduce improved practices on their farms.

Short courses

(3) Short courses on special subjects held on government farms are valuable as a means of inducing farmers to adopt improved agricultural practices. Special care must be taken that the farmer is not misled by the experimental character of the work on these farms. The use and repair of improved implements are perhaps two of the most important subjects for a short course.

Itinerant demonstrations

(4) Itinerant demonstrations should supplement the work with improved implements on the demonstration plot or farm. The demonstrator should take his improved plow or implement from place to place in the district where the farm or plot is situated to demonstrate its advantages to the farmers. An instructor should accompany him to teach the village smiths how to fit new parts and make adjustments and repairs.

Agricultural shows

(5) The agricultural show is another means of reaching the farmer. It is being increasingly used by the agricultural departments and is proving valuable as a means of following up the demonstration work of the department. It may be organized for a whole province or for a part of a province or even for a single district or a tehsil (local revenue division of a district). The agricultural department or outside organizations in cooperation with the department may put on the agricultural show. The exhibition of livestock has proved to be more effective than that of produce though the latter must be included. An exhibit of machinery and implements suited to the locality, accompanied by demonstrations of their operation, is an important feature of the show. To be really effective in influencing farmers shows should be held from year to year, not necessarily in the same place, but in the same district. Prizes in the shape of medals are greatly valued by exhibitors and should be awarded for exhibits of superior excellence. For ordinary exhibits, prizes in kind, such as an improved plow or other agricultural implement as an award in cattle exhibits, are better than money.

Publications

(6) The agricultural departments publish leaflets, bulletins, journals, and calendars in the native language and in most of the provinces they supply material regularly to the native and English press. Opinions differ as to the value of publications in inducing farmers to adopt improved practices. In provinces where there is a great deal of illiteracy they are, of course, of little value. To be of any value leaflets in the native tongues should be written in simple language and should be published in connection with some special demonstration in which the farmers are interested. Publications have proved more successful as a form of propaganda in Madras than perhaps in any other province, owing, no doubt, to the higher standard of literacy.

Motion pictures, lantern slides

(7) Motion pictures and lectures with or without lantern slides are of little value unless used in connection with actual demonstration results. For the production of a successful agricultural film, intimate knowledge of village life and the mentality of the average villager are necessary. The Railway Department of India has recently introduced "traveling cinemas" with the cooperation of the imperial and provincial departments and the experiment bids fair to prove a success.

Demonstration trains

(8) Demonstration trains which were operated in 1927 in Bengal and Punjab by the railway department in cooperation with various government departments proved a successful experiment. Other provinces are considering the adoption of this means of imparting scientific instruction and establishing close contact with the farming people which has proved advantageous in other countries.

Provincial extension officers

(9) The appointment of an officer to give his entire time to organizing and systematizing demonstration and propaganda work is regarded important. He would form a connecting link between the district or extension staff and the research workers and bring to the notice of the latter matters requiring their attention. His principal duty would be to watch the various schemes used, note their results, and suggest more effective methods.

Object

Cooperative demonstration train in Bengal. - The first demonstration train ever put on in India was operated in Eastern Bengal early in 1927 by the Eastern Bengal Railway Company in cooperation with the Agricultural, veterinary science, public health, industries, and cooperative departments of the Province. The object of this undertaking was to bring instruction in improved methods and practices to the farming people, and to convince them that by adopting modern scientific processes, they would greatly improve the quality and quantity of their returns. The success attending this experiment in Bengal warrants the belief that the demonstration train will prove one of the most effective means of establishing direct contact with the illiterate masses of rural India.

Coaches

The train consisted of seven bogie cars (swivel-truck railway cars) used as demonstration coaches and several other coaches, either bogie or four-wheel cars, which accommodated the officer in charge, the demonstration staff, the electric power, a motor truck and a motor car. The original fittings were removed from the demonstration cars and were replaced by others to meet the requirements of the various departments cooperating with the railway company in running the train. The railway provided the publicity display, an information bureau, and catering compartment for the use of the demonstration staff.

The cooperating departments shared the expense of operating the train.

Agricultural car

The car fitted up by the agricultural department had two sections: Sericulture and general. The exhibits in this car consisted of implements, samples of cereals, pulses, oil seeds, fibers, fodder and foodstuffs for cattle; narcotics and drugs; typical soils of Bengal; manures and fertilizers; insect pests and fungous diseases of crops; insecticides and fungicides; sprayers and fumigators; and a model of an improved furnace for making jaggery (coarse sugar made from various kinds of palms).

Veterinary car

In the veterinary car were charts, posters, and photographs illustrating milk yield and the average amount of milk available for each person per annum; the small acreage in pastures and the need of growing fodder crops; common causes of degeneration of cattle in Bengal and practical remedy; common, contagious, and infectious diseases of cattle and their remedies; proper and improper food for cattle; points of good cattle, and so forth. There were also collections of different kinds of cattle fodder; of poisonous and medical plants, pathological biological, and bacteriological specimens and instruments used in veterinary work.

Public-health car

In the public-health car were models showing the spread and prevention of malaria; work of antimalarial societies; cholera, enteric, and other water-borne diseases and methods for their prevention; small-pox and its prevention by vaccination; child welfare work; food and vitamin values of various food-stuffs; good and bad diets. The causes, prevention, and cure of malaria, cholera, small pox, tuberculosis, and kala-azar (malignant fever caused by a parasite) as well as various aspects of child welfare were depicted by colored posters. The diets of different nationalities and their effect upon the human system were shown in pictures, and a series of "hygienic habits" pictures were included in the display.

Industries car

Weaving and tanning sections each occupied one-half of the industries car. The weaving exhibits were from a government weaving institute and consisted of improved looms and other equipment, charts, and textile products. Practical demonstrations were given in improved methods of spinning, weaving, dyeing, and printing textiles, in canework, and the making of useful household articles, including mattresses, and in thatching with the use of the common water hyacinth. Exhibits in the tanning section were from the Bengal Tanning Institute in Calcutta and consisted of various kinds of leather and manufactured leather goods; tanning materials; defective hides; skin diseases; bad curing; branding marks; with charts giving instruction for getting rid of these defects.

Cooperative department car

The car of the cooperative department was fitted up as an information bureau for all the cooperative activities of the presidency of Bengal with photographs, charts, graphs, and other exhibits showing the activities, progress, and achievements of the department. Department officials explained the benefits from the application of cooperative principles for the improvement of the public health; improvement of cattle; organization of credit; agriculture; production and sale; purchase and sale; sale and supply; and social work.

Publicity, literature

Posters, literature, time tables, and photographs were carried in the publicity car where two clerks supplied information. When questions could not be answered on the spot, memorandums were made for written replies to be given later. Each demonstration car carried leaflets, books, and photographs relating to the branches of work represented.

Results

The train stopped at 30 stations and covered 1,262 miles during the month's tour of Eastern Bengal. The arrival of the train was duly advertised before each stop. Lecturers explained the exhibits and motion pictures and lantern slides provided an additional means of instruction. A total of about 90,000 persons visited the train and about 120,000 attended the open-air lecture and motion-picture meetings held in the evening. The agricultural department recorded more than 500 replies for future attention and had numerous requests for improved seeds and fertilizers. The industries exhibits were very interesting to the visitors, among whom were a number of college students. As a result of the veterinary exhibits, a good deal of money and land was contributed for the establishment of veterinary hospitals and dispensaries. The tour showed that a definite need was filled by the demonstration train by which the cooperating departments were brought into close contact with the people. Encouraged by the results of the tour, the railway board decided to operate a cooperative demonstration train on each of the four State railways - The Eastern Bengal, East India, Northwestern, and Great Indian Peninsula, serving the provinces of Bengal, Bihar and Orissa and United Provinces, Punjab and Sind, and Bombay and Central Provinces - the trains to be equipped and the tours conducted on lines practically similar to those of the Eastern Bengal tour in 1927. In accordance with this decision the government of Punjab operated a demonstration in December, 1927, in cooperation with the Northwestern Railway.

-ooOoo-